

**The experts in fluid technology**  
**P3 POWERLUBE / P6 MAXILUBE**  
**AIR OPERATED GREASE PUMPS**

**INSTRUCTION MANUAL**

**INTRODUCTION**

Thank you for purchasing either a P3 Power-Lube or P6 Maxi-Lube air operated, high pressure grease pump. Both the Power-Lube and the Maxi-Lube feature a non-corroding 50:1 ratio air motor and are supplied with drum lid, rubber edged follower plate, grease strainer, 4m high pressure grease hose, 'Z' type swivel and a B2 Booster Gun as standard equipment.

A full range of greasing accessories are available to suit the Power-Lube or Maxi-Lube. Consult your local Power-Lube distributor for more informatin

Please read and retain this instruction manual to assist you in the operation and maintenance of this quality product.

**GENERAL INFORMATION**

This manual assists you in operating and maintaining your new Power-Lube or Maxi-Lube. The information contained will help you ensure many years of dependable performance and trouble free operation.

Please take a few moments to read through this manual before installing and operating your Power-Lube or Maxi-Lube. If you experience problems with the product, refer to the Maintenance and Trouble Shooting sections of this manual. If you require any further assistance please contact your local Power-Lube or Maxi-Lube distributor.

**IMPORTANT INFORMATION**

**Read this information carefully before use. Your safety is important to us. Please read and follow all operating and safety instructions listed below. Make sure all operators have adequate access to the following instructions.**

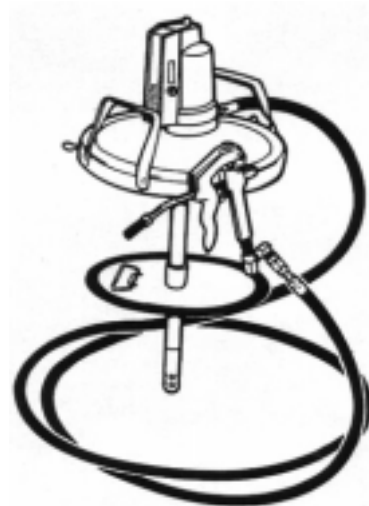


**CAUTION**

This is a 50:1 ratio high pressure grease pump. Because of the high pressures developed by this pump, the possibility of fluid injection into the flesh, or eyes, is a potential hazard.

**Never allow any part of the human body to come in front of, or in direct contact with a material outlet. Never point the nozzle of the gun at yourself or anyone else.**

Most injections occur because of component rupture. **Never exceed the pressure rating of any component in the system.** Remember, fluid pressure generated is fifty times the air inlet pressure.



Weak, worn or damaged hoses are also a hazard. Before operation check hoses for signs of wear, leaks or loose fittings. Tighten all fluid connections regularly and replace weak or damaged hose. Your personal safety and well being are at stake.

**If accidental injection should occur, seek immediate emergency medical attention.**

**Do not** use air pressure greater than 1000kPa /150psi /10bar.

**Do not** hit the unit if it fails to operate.



**CAUTION**

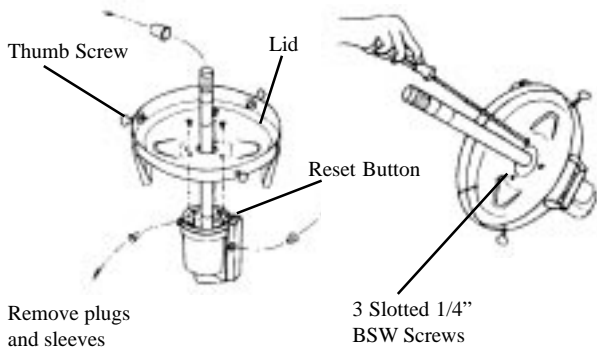
**Before attempting any maintenance or repairs of this product, disconnect air supply then squeeze gun trigger to release pressure.**

**ASSEMBLY**

This carton contains an Air Motor / Suction Tube assembly (Pump unit), Lid, Follower, High Pressure Grease Hose, B2 Booster Gun / Swivel assembly and a plastic bag containing 3 slotted screws and an instruction sheet.

- 1) Remove the components from the protective packaging. Reposition the 3 lid positioning screws so the threaded ends are flush with the inside of the lid (Fig 1).
- 2) Slide the suction tube through the lid. Line up the holes in the lid with the threaded holes in the air motor base, so that the grease outlet of the pump faces one of the lid handles (Fig4). This allows easy fitting and removal of the air -line. Secure the lid to the air motor with the 3 slotted screws provided (Fig 2).

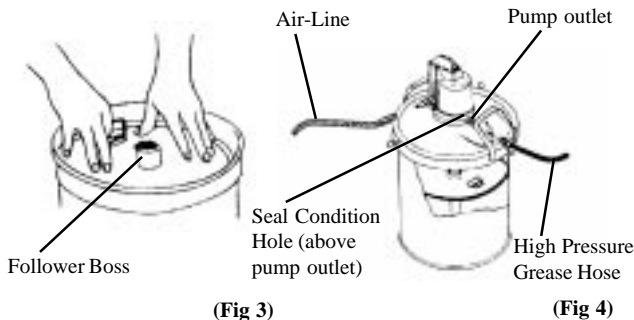
- 3) Remove the lid from the grease container. This grease pump is recommended for use with grease up to and including NLGI No.2. Heavy grades of grease or cold temperatures can result in operating difficulties.
- 4) Place the follower plate in the grease container with the follower handle and boss facing upwards (Fig 3). Push the follower plate down onto the grease until some grease is forced through the centre (boss) hole.



(Fig 1)

(Fig 2)

- 5) Insert the suction tube through the follower boss and push the lid / pump assembly down until the lid sits squarely on top of the grease container. Screw in the lid positioning the thumb screws equally, until finger tight. The lid must be centrally located on the grease container.



(Fig 3)

(Fig 4)

- 6) Apply thread tape or other thread sealant to both ends of the high pressure grease hose. Pass the hose through the lid assembly and screw the hose into the pump outlet tightly ( fig 4). Screw the other end of the hose into the ZSB swivel on the inlet of the B2 booster gun.
- 7) Before connecting the air supply the customer should add a “stop” compressed air cock. The air cock must be a ¼ turn type ( allowing quick closure) and should be located close to the body of the pump and be easily recognised. There is a wire mesh strainer located inside the brass air inlet. It is recommended that a micro-fine (5 micron) in line air filter be fitted to ensure maximum efficiency of this pump. Then connect your air line to the swivel type, brass air inlet.



### CAUTION

It is important to read all warnings and operating instructions before use.

- 8) Turn on your air supply and press the reset button (fig 1). Hold the B2 booster gun near a waste container (to collect the test grease) and squeeze the gun trigger. The air motor will start to operate and the factory test grease will appear followed by air (in high pressure grease hose), followed by your grease. Tighten connections as required.

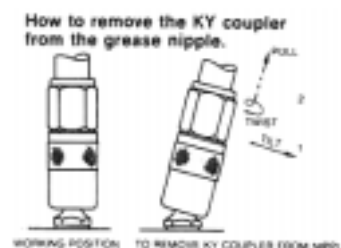
## OPERATION

- 1) Before connecting the air supply check that all fittings have been tightly fastened and all hoses are checked for wear and or damage.
- 2) Fully depress the reset button (fig 1), add air cock and recommended air filter (as described in item ‘2’ of assembly section) then connect the air supply. The optimum pressure range is 550 to 700 kPa ( 80-100psi / 5.5-7 bar).
- 3) When air is connected to the pump and is turned on, the air motor will start operating, this will allow grease pressure to build, which pushes grease through the pump and hose to the grease gun until ‘stall’ pressure is reached, at this pressure the pump will stop.

For grease delivery press the trigger on the booster gun. To stop grease delivery release the trigger on the booster gun. When the trigger is released the grease flow will stop and the pump will again build to ‘stall’ pressure and stop.

- 4) To grease, connect the B2 booster gun coupler to the grease nipple then squeeze the trigger. Normally, the air motor will operate and grease will be pumped through the nipple. If the grease nipple is blocked, the air motor will stop (stall). If this happens do not remove the gun from the nipple, just squeeze the trigger on the B2 gun three or four times. The B2 booster gun has a boost facility which allows the grease pressure delivered to the grease nipple to be boosted and will clear most blocked nipples.

**Note:** The B2 booster gun creates the extra pressure and not the pump.



(Fig 5)

- 5) Remove the coupler from the grease nipple by first tilting (to release any pressure) then a twist and pull motion. Loosen the black coupler cap if difficult to remove.



### CAUTION

Use the lid handles to move the greasing unit. Do not move the pump by pulling the air or grease hose.

**Note:** At the end of the day or if the pump is not going to be used for an extended period of time, disconnect the air supply and release the grease pressure ( squeeze the gun trigger till the grease ceases to flow).



## CAUTION

**Before carrying out any maintenance, disconnect the air and release the grease pressure by pressing the trigger on the B2 Booster gun until the grease flow stops.**

## MAINTENANCE

- 1) Keep your pump, high pressure grease hose and air-line clean.
- 2) Inspect your pump, high pressure hose and air-line weekly for any signs of deterioration or damage. ie: hose separation, hose distortion etc. (Replace any suspect or damaged components as required).
- 3) Every 2 weeks or sooner if the pump is used every day apply a few drops of light oil, (sewing machine oil is ideal), to the air inlet of the pump.
- 4) Check the top seal condition hole (Fig 4). A small quantity of grease indicates seal lubrication is OK. A continuous 'worm' of grease indicates a worn seal. (Replace if required).

## PUMP UNIT DISASSEMBLY

The following procedure should be followed for pump disassembly to carry out routine maintenance. Refer to the exploded parts diagram and listing on the following pages.

- 1) Disconnect the air supply and release the grease pressure by squeezing the B2 booster gun trigger.
- 2) Remove the high pressure hose and lid from the pump unit.
- 3) Remove 4 screws (22) holding cylinder (7) to the base (21). There's a slot in the base near the valve body (30).
- 4) Remove the cylinder (7) from the cylinder base (21).
- 5) Remove cover screw (6) and valve body cover (31).
- 6) Remove 6 screws (33) holding valve body (30) to cylinder (7) pull off valve body assembly and valve gasket (28).
- 7) Pull out 2 brass pins (32) from valve body. Lever out plugs (29) and (36).
- 8) Gently push spool (34) out of valve body. Be careful when removing "o" rings (3) and (14).
- 9) Remove top (long) poppet valve assembly 2,4,5 and 'o'rings (3).

- 10) Hold the hex section of insert (23) horizontally in a vice, hold piston rod (13) as close as possible to the piston (11) with multi-grips. Remove nut (8), piston (11), washers (9) and 'o' ring (12).

**Note:** If piston rod is damaged, premature wear can occur to piston rod seal (18).

- 11) Remove the strainer tube (53). there are spanner flats on the bottom of this tube.
- 12) Remove the circlip (52), primer (51), valve seat (50) and valve spacer (49).
- 13) Use a pipe wrench or vice grips to remove the tube link (48).

**Note:** Repair any damage caused to the tube link with a file and emery paper.

- 14) Grip the high pressure suction tube (43), with a pipe wrench, as close as possible to the top. Remove the high pressure suction tube.

**Note:** There is thread sealant on the insert / tube thread.

- 15) Pull out the primer (42) and piston rod assembly (13) from the base (21). Use this rod assembly to push the washer (44), Seal (45), and cylinder (46) out of the high pressure suction tube (43).
- 16) Remove the gland nut (17), then the bottom (short) poppet valve assembly (27), including o'ring (1), (3) from the cylinder base (21).
- 17) Use the primer / piston rod assembly to push the piston rod seal (18) from the cylinder base (21).
- 18) Knock out the 2 roll pins (38) with a pin punch. Unscrew the primer / piston rod assembly and remove the steel balls (39) and suction spring (41).

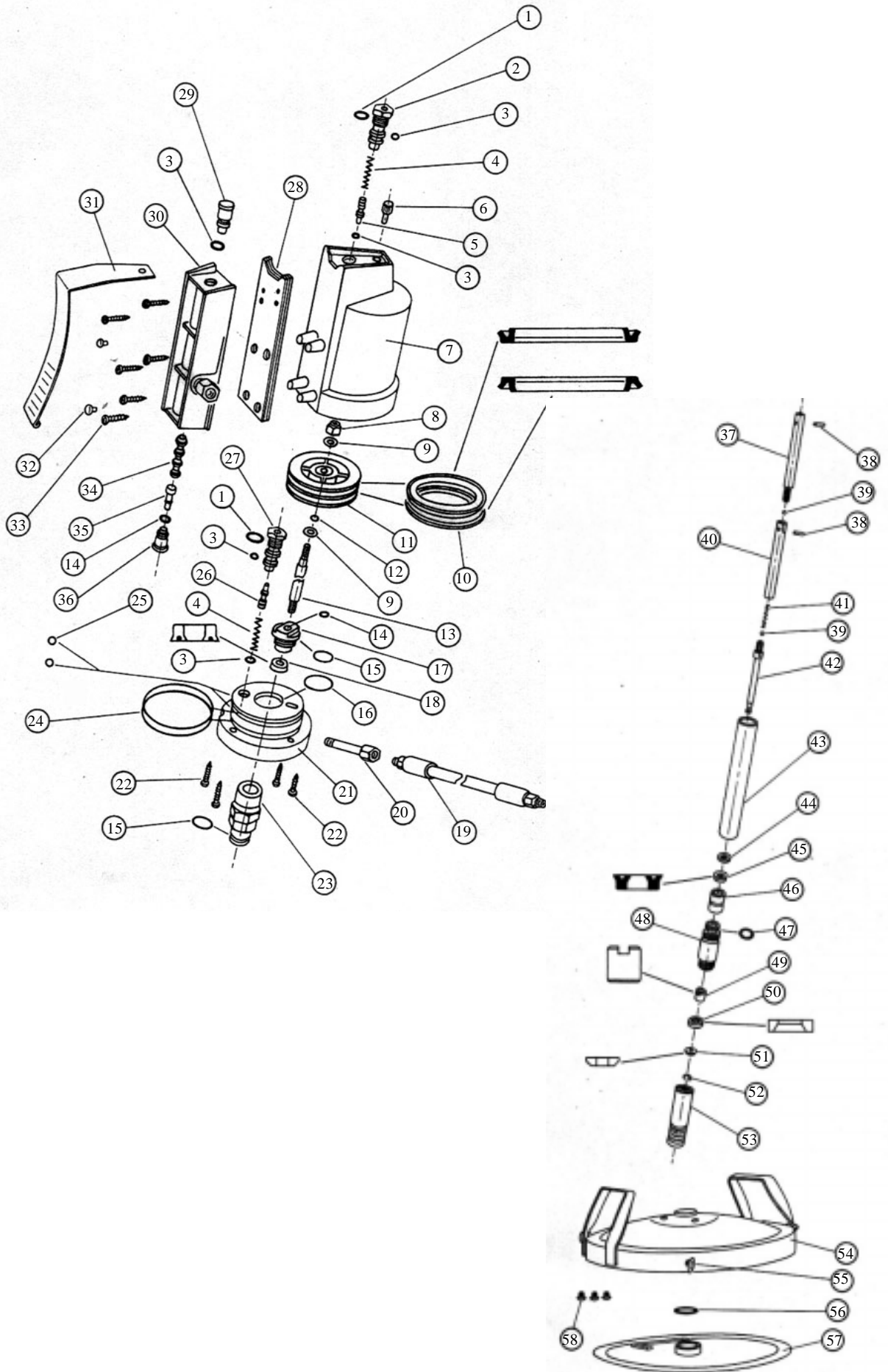
## PUMP RE-ASSEMBLY

- 1) Ensure that all parts have correct orientation. If the parts are assembled upside down, the pump will not work. Check the parts diagram for the correct orientation.

**Note:** Assembly of the pump is a reversal of disassembly procedure.

- 2) Apply thread sealant (loctite or similar) to insert (23) and primer rod (42) threads.
- 3) Fill the strainer tube (53) with grease for initial prime. Hand tighten the suction tube (43), tube link (48) and strainer tube. Use the spanner flats on the strainer tube to tighten all three tubes.
- 4) Ensure that all o'rings, particularly in the valve body (30) and the poppet valve (2), (27) areas, sit square.
- 5) Apply Light grease eg. petroleum jelly to the o'rings (24), (25) and piston seals (10) before fitting the cylinder (7) to the cylinder base (21).

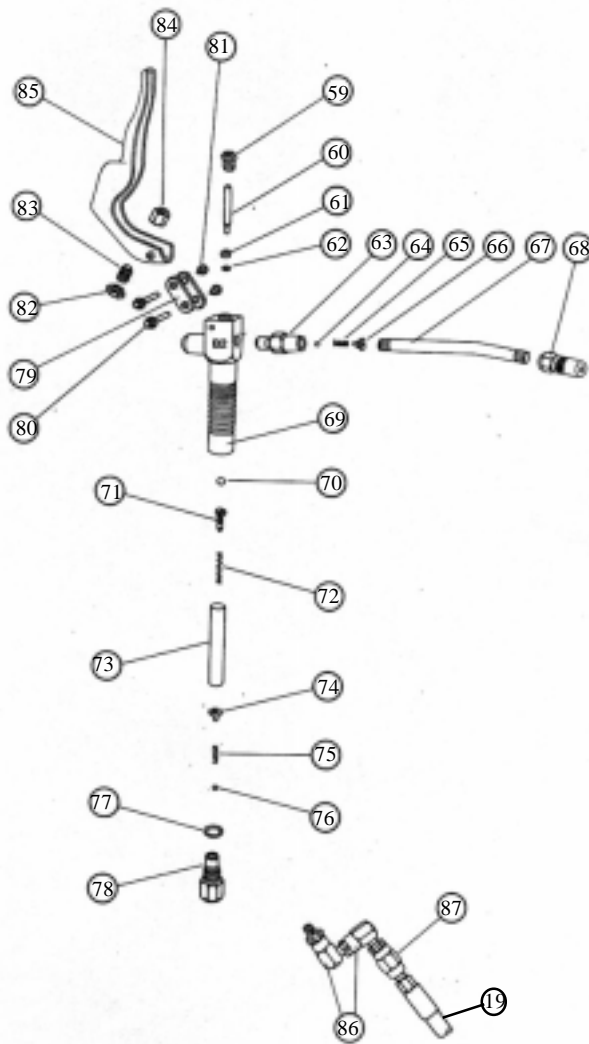
# PARTS DIAGRAM



# PARTS LIST

ORDER FOR REPLACEMENT						
ITEM	PART No.	No. off	PART /SET	KIT . REF	DESCRIPTION	
			P3-1K (KIT A)		AIR MOTOR SERVICE KIT	
			P3-5K (KIT B) incl 2xBS117		LOWER PUMP KIT	
			P3-3K (KIT 3)		O'RING KIT	
1	BS013	2	PA31s	A & C	O'RING	
2	PA31	1				TOP POPPET BODY (LONG)
3	BS011	5			A & C	O'RING
4	PA8	2			A & C	POPPET SPRING
5	PA45	1		A	POPPET PISTON ASSEMBLY	
6	PA21	1	order PA44s		COVER SCREW	
7	PA68	1	PA68s		AIR CYLINDER	
8	N216	1	PA4s		1/4" UNF NYLOCK NUT	
9	N129	2				1/4" WASHER
10	PA25	2				CUP SEAL
11	PA3	1				AIR PISTON
12	BS010	1		A & C	O'RING	
13	PA19	1	PA19s		PISTON ROD	
14	BS012	2	PA48s	A & C	O'RING	
15	PA36	2			A & B & C	O'RING (90 IRHD)
16	BS022	1			A & C	O'RING
17	PA48	1				GLAND NUT
18	PA23	1	PA23s	A	PISTON ROD SEAL	
19	PF6	1	PF6		H.P. GREASE HOSE ASSEMBLY	
20	PK94	1	PK94s		HOSE ADAPTOR	
21	PA46	1	PA46s		CYLINDER BASE	
22	N38	4	order PA2s ind 4xN38, 6xN37		HI-LOSCREW	
23	PK95	1	PK95s ind 1xPA36		STEEL INSERT	
24	BS231	2		A & C	O'RING	
25	BS006	2		A & C	O'RING	
26	PA32	1	PA33s ind 1xBS013, 1xBS011, PA8	A	POPPET PISTON ASSEMBLY	
27	PA33	1				LOWER POPPET BODY (SHORT)
28	PA38	1	order PA39s	A	VALVE GASKET	
29	PA93	1	order PA97s		VALVE PLUG	
30	PA39	1	PA39s ind PA38 (For comp assy order PA30s)		VALVE BODY	
31	PA44	1	PA44s ind PA21		VALVE BODY COVER	
32	PA15	2	order PA97s		END PLUG PIN	
33	N37	6	order PA2s ind 6xN37, 4xN38		HI-LOSCREW	
34	PA34	1	PA34s	A	VALVE SPOOL ASSEMBLY	
35	PA95	1	PA97s ind BS012, 1xBS011, 2xPA15, PA93	A	RESET BUTTON ASSEMBLY	
36	PA16	1				END PLUG
37	PK152	1	PK152 (P3 ONLY)		P3 CONNECTING ROD	
37	PK160	1	PK160 (P6 ONLY)		P6 CONNECTING ROD	
38	N325	2		B	3/32" X 1/2" ROLL PIN	
39	N404	2		B	5/32" STEEL BALL	
40	PK73	1	PK73s		H.P. PISTON	
41	PK84	1			B	SUCTION SPRING
42	PK167	1	PK167s		PRIMER ROD	
43	PK185	1	PK185 (P3 ONLY)		P3 H.P. SUCTION TUBE	
43	PK195	1	PK195 (P6 ONLY)		P6 H.P. SUCTION TUBE	
44	PK165	1	PK88s	B	SEAL SUPPORT WASHER	
45	PK88	1			B	H.P. PISTON SEAL
46	PK166	1		B	H.P. PISTON CYLINDER	
47	PA36	1		B & C	O'RING (90 IRHD)	
48	PK97	1	PK97s		H.P. TUBE LINK	
49	PK203	1	PK78s		VALVE SPACER	
50	PK78	1				VALVE SEAT
51	PK159	1			B	PRIMER
52	N373	1		B	CIRCLIP	
53	PK158	1	PK158s		STRAINER TUBE	
54	PK85	1	PK85s ind 3xN21 (P3 ONLY)		P3 LID ASSEMBLY	
54	PK101	1	PK101s ind 3xPK130 (P6 ONLY)		P6 LID ASSEMBLY	
55	N21	3	order PK100s ind 3xN21, 3xN52		5/16" BSW THUMB SCREW	
55	PK130	1	order PK140s ind 3xPK130, 3xN52		5/16" BSW THUMB SCREW	
56	BS216	1		B & C	O'RING	
57	PK86	1	PK86s ind 1xBS216 (P3 ONLY)		P3 FOLLOWER ASSEMBLY	
57	PK107	1	PK107s ind 1xBS216 (P6 ONLY)		P6 FOLLOWER ASSEMBLY	
58	N52	3	order PK100s (P3 ONLY) order PK140s (P6 ONLY)		1/4" BSW SLOTTED SCREW	

# PARTS DIAGRAM



# PARTS LIST

			ORDER FOR REPLACEMENT			
ITEM	PART No.	No. off	NEW PART /SET	KIT. REF	DESCRIPTION	
			B2-1K (KIT A)			
59	BJ1	1	BJ1s		PLUNGER GUIDE BUSH	
60	BJ23	1		A	PLUNGER	
61	BJ3	1		A	BACK-UP WASHER	
62	BS008	1		A	O'RING	
63	BJ4	1	BJ4s ind BJ6, KH5, N403		VALVE BODY	
67	KH23	1	KH23		EXTENTION TUBE	
68	KY	1	KY		COUPLER ASSEMBLY	
69	BJ8	1	BJ8s ind BJ20, BJ15, BJ17		GUN BODY	
70	N400	1	BJ9s	A	1/4" STEEL BALL	
71	BJ13	1				BALL SUPPORT
72	BJ9	1		A		BALL SPRING
73	BJ19	1	BJ24s		SPRING GUIDE	
74	BJ6	1				VALVE INSERT
75	KH5	1		A		VALVE SPRING
76	N403	1		A		7/32" STEEL BALL
77	BS013	1		A	O'RING	
78	BJ24	1			INLET BODY	
79	BJ15	2	BJ26s		TRIGGER LINK	
80	BJ17	2				LINK PIN
81	BJ20	2				SCREW
82	N218	1			LOCK NUT	
83	N29	1			ADJUSTINGSCREW	
84	BJ26	1	BJ25s		HIGH NUT	
85	BJ25	1				TRIGGER
86	SB6s	2	ZSB		SWIVEL ADAPTOR ASSEMBLY	
87	SB4s	1			SWIVEL BODY ASSEMBLY	

## TROUBLE SHOOTING GUIDE

PROBLEM	CAUSE	REMEDY
1) Air motor runs but does not pump grease	a) The grease is too thick or too cold b) The grease container is damaged causing the follower to stop.	a) Use NLGI no 2 or thinner grease. Store grease in a warm place b) Repair or replace container. Follower must be able to move freely.
2) Air motor runs slower than normal	a) The air pressure is too low	a) Increase air pressure, Minimum is 400 kPa/ 60 psi/ 4 bar, Maximum is 1000 kPa/ 150 psi/ 10 bar.
3) Air motor cycles intermittently when not using the pump	a) Grease leaking at hose (19) and or swivel (86/87) connections b) Grease leaks at B2 Gun coupler (68) c) Grease leaks at the seal condition hole d) High pressure seal (45) worn or damaged	a) Check all connections. Use thread sealant and tighten leaking connections. b) See 'Problem 5' below c) See 'Problem 4' below d) Replace high pressure seal (45)
4) Grease leaks out of the seal condition hole	a) Small quantity of grease indicates seal lubrication is OK b) Continuous 'worm' of grease indicates the seal is worn or damaged	a) No action required b) Replace Piston rod seal (18)
5) Gun leaks continuously out of the coupler	a) Incorrect trigger adjustment b) Bent or damaged plunger	a) Adjust the trigger to allow 3 to 6mm (1/8" to 1/4") free movement b) Replace plunger (60)
6) Air leaks continuously from the valve body cover	a) Replace worn air piston cup seals (10) and / or piston (11)	a) replace cup seals and / or piston
7) Air motor does not operate, but will cycle when the reset button is pressed	a) The spool (34) is jammed in the valve body (30) b) Top poppet spring (4) is fatigued	a) i) Push the reset button ii) If the motor starts, disconnect the air line and apply 3 or 4 drops of light oil to the air inlet of the pump iii) If the motor does not start, follow 'Pump unit disassembly' steps 1,2 and 4 through 7 iv) Replace spool (34) and clean valve bore v) When re-assembled, apply 3 or 4 drops of light oil to the air inlet of the pump b) Replace the top poppet spring
8) Air motor does not operate or cycle when the reset button is pressed	a) Lower poppet spring (4) is fatigued	a) Replace the bottom poppet spring

## SPECIFICATIONS

Maximum Air Pressure	1000 kPa / 150 psi / 10 bar
Minimum Air Pressure	400kPa / 60 psi / 4 bar
Typical Air Consumption	0.3m <sup>3</sup> per minute (9 cfm)
Compressor Size	0.08m <sup>3</sup> per minute (3 cfm)
Noise Level	85 Db @ 2 Meters
Air Inlet	¼" (F) NPT (Swivel Type)
Pump Ratio	50:1 (Grease Pressure is 50 times the air pressure)
B2 Booster Gun (Manual boost only)	Up to 69.000 kPa / 10,000 psi / 690 bar
Hose Type/Threads	4m x 6mm I.D. SAE 100 R2 / ¼" (M) NPT
Swivel Type/Threads	High Pressure 'Z' type ¼" (F) NPT / 1/8" (M) NPT
Manufacture Date	Week / Year located on the side of the cylinder base



### WARRANTY POLICY

Macnaught Limited ("Macnaught") warrants that Products purchased after 1<sup>st</sup> of July 1999 will be free from any defects caused by faulty materials or workmanship for a period of (5) years from the date of purchase of the product.

For componentry contained in the product which are subject to wear, the warranty period will be (12) months from the date of purchase of the product.

Provided that during the Warranty period:

- 1) Macnaught receives notice setting out full details of any defect in any product and details of the time and place of purchase.
- 2) The Purchaser, at their own cost returns the product to the nearest authorized Macnaught service center.

Macnaught shall, at its option repair or replace any product found defective by its inspection.

This warranty does not cover failure of parts or components due to normal wear or damage, which in the judgment of Macnaught, arises from misuse, abrasion corrosion, negligence, accident, substitution of non-Macnaught parts, faulty installation or tampering.

If Macnaught inspection discloses no defect in material or workmanship, repair or replacement and return will be made at customary charges.

Macnaught's liability and the purchaser's rights under this Warranty shall be limited to such repair or replacement and in particular, shall not extend to any direct, special, indirect or consequential damage or losses of any nature.

The foregoing warranty supersedes, voids and is in lieu of all or any other warranties.

Note:

This warranty does not form part of, nor does it constitute, a contract between Macnaught and the purchaser. It is additional to any warranty given by the seller of the products and does not exclude, limit, restrict or modify the rights and remedies conferred upon the purchaser, or the liabilities imposed on the seller, by any statute or other laws in respect of the sale of the product.



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